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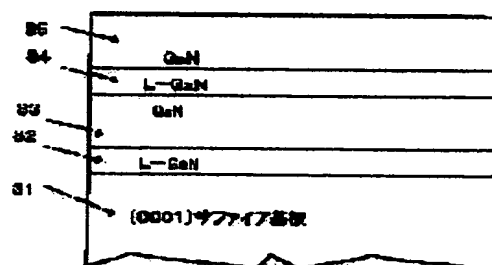
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## 54) SEMICONDUCTOR SUBSTRATE AND FORMATION THEREOF

57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent deterioration of quality accompanying picking of exposure substrate with a low crystal defect density from a growing furnace by allowing a III group nitride semiconductor to grow on a III group nitride semiconductor substrate or different types of substrates made of sapphire, etc., and crystallizing a low-temperature deposition thin film.

**SOLUTION:** A III group nitride semiconductor substrate or a sapphire substrate 11 is placed on the heating part in an organic metallic compound vapor-phase growth device, and after a nitrogen in the device is displaced with hydrogen, an ammonium and a trimethyl aluminum are supplied to deposit a first low-temperature deposition buffer thin film 32. Next, the thin film 32 is changed to single crystal and a first single crystal GaN thin film 33 is grown thereon, and then a thin film 34 containing Ga and nitrogen is deposited. Further, a GaN thin film is subject to single crystal growth on the thin film 34 so as to form a second single crystal GaN thin film 35. Therefore, an exposure substrate with a low density of crystal defect can be obtained and the deterioration of quality be prevented.



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